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EXAMINER	
MCLEAN, NEIL R	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/787,304	IKEGAWA, YOSHIHARU	
	Examiner	Art Unit	
	Neil R. McLean	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 25-33 are pending in this application.

Claims 25-30 have been amended.

Claims 31-33 are new.

Response to Arguments

2. Regarding Applicant's Argument/Newly Added Claim Limitation (page 15, line 18 – page 16, line 1):

"However, neither Mitani nor Iizumi discloses or suggests a transmission unit or transmission step that transmits different combinations of first to fourth colors in areas Na, Nb, and Nc on N-th and (N+l)th pages based on discriminations by the first and second discrimination units, as recited in amended independent claims 25, 27, and 29."

Examiner's Response:

Iizumi and Mitani do not disclose expressly wherein the transmission unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourht colors in the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer.

Konno discloses wherein the transmission unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourth colors in

the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer (Figure 32 shows the relationship between output timing of images Y1, M1, C1 and K1 on the first page, each of which is image data, and timing transfer 1 in which the image on the first page is transferred onto the sheet 3, and the timing, at which the image K1 which is the final image data of the first page overlaps).

Konno, Iizumi & Mitani are combinable because they are from the same field of endeavor of image processing; e.g., all three references disclose methods of rasterized image processing control. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourht colors in the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer. The suggestion/motivation for doing so would be to perform sequential processing more economically, and to increase the performance of the printer as disclosed by Konno in the Background and Summary of Invention. Therefore, it would have been obvious to combine Iizumi and Mitani with Konno to obtain the invention as specified to save money and time.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 25-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitani (US 5,737,503) in view of Iizumi et al. (US 6,891,638) hereinafter 'Iizumi', and further in view of Konno et al. (US 6,529,289) hereinafter 'Konno'.

Regarding Claims 1 – 24: (Cancelled)

Regarding Claim 25: (Currently Amended)

Mitani discloses an information processing apparatus (e.g., Host Computer 1 in Figure 1) for transmitting data to a printer (e.g., Printer 100 in Figure 1), wherein the data is divided in a band unit (FIG. 2 illustrates the memory contents of memory device (RAM) 5 of FIG. 1 in a normal state. The memory device 5 in the normal state is divided into the intermediate data memory (intermediate buffer) 5-1, the print image memory (cache buffer) 5-2, and the output print image memory (raster buffer) 5-3 of band size, by the memory location.) in each of a plurality of colors in registration with a position of an image forming section for each color, in which when an N-th page is printed, areas on the N-th page overlapping an (N-1)th page, an (N+l)th page, and overlapping no page, are defined as Na, Nc and Nb (e.g., FIG. 8 is an enlarged view of A portion as shown in FIG. 7. The recording medium controller 11 has a first mode in which 15a is the first page, 15b is the second page, 15c is the third page and 15d is the fourth page in the recording sheet 15 as described in Column 11, lines 16-24), respectively, said information processing apparatus comprising:

a conversion unit configured to convert document data into image data (e.g, Print Image Generator (Rasterizer) 4-1 in Figure 1 as described in Column 6, lines 56-60);

a division unit configured to divide the image data converted by said conversion unit in a band unit (e.g., output print image memory 5-3 (raster buffer) in Figure 1 for memorizing the output print image of band size or one page);

a compression unit configured to compress the image data divided by said division unit (e.g., The image formation (rasterize) is performed in order from the intermediate data a formed on the upper side of page, and the output print image memory 5-3 is formed while gradually compressing the intermediate data memory 5-1 downwards, as shown in FIG. 16E as described in Column 19, lines 29-39);

a calculation unit configured to calculate a size of the image data compressed by said compression unit (e.g., The program code or device which performs what is described at Column 19, lines 15-20; the output print image memory 5-3 is created in accordance with the output size, as shown in FIG. 16C, and the image formation (rasterize) which is essentially performed after intermediate data a of one page have been generated is made partially for the intermediate data a, whereby the abnormal termination caused by insufficient memory capacity is avoided.);

a first discrimination unit (e.g., 6 is a controller (CPU) for controlling the entire printing apparatus.) configured to discriminate based on the size of the compressed image data calculated by said calculation unit (e.g., The CPU 6 alters the size of intermediate data memory 5-1, using a program of the memory controller 7, as required, or stores the intermediate data generated in the output print image memory 5-3 as described in Column 19, lines 49-56), whether data of the N-th page and the (N+l)th page can be stored in a memory (FIG. 9 is a map chart showing the memory contents stored in the memory device 6 in a normal state, wherein the memory device (RAM) 5 has consecutive memory areas as described in the example 1, which are normally divided into a first memory area of intermediate data memory (intermediate buffer) 5-1 and a second memory area of print image memory (cache buffer) 5-2 at a boundary 34, with no output print image memory (raster buffer) 5-2 formed as described in Column 11, lines 44-51) if these data are mixed and transmitted in a printing order (e.g., for the intermediate data requiring a relatively long time to form print

image, print image generated is saved in the print image memory (cache buffer) 5-2, and when the intermediate data is processed at the next time, the print image saved in the print image memory 5-2 is reused, thereby omitting the time for print image formation and shortening the time needed for the printing process as described in Column 20, lines 28-34.);

a second discrimination unit (e.g., 7 is a memory controller which stores a program for managing or changing on demand the ratio of capacities in the intermediate data memory (intermediate buffer) 5-1, the print image memory (cache buffer) 5-2 and the output print image memory (raster buffer) 5-3 in the memory device 5.) configured to discriminate whether data in the area Na has been transmitted to the printer; and

a transmission unit configured to transmit data to printer (8 is an output unit (output interface) for outputting print image generated to a printer engine 9),

wherein said transmission unit transmits data in the areas Nb and Nc on the N-th page and data in the area (N+l)a on the (N+l)th page to the printer, if said first discrimination unit discriminates that the data of the N-th page and the (N+ 1)th page can be stored in the memory (30 shows a state where there is a sufficient space capacity of memory device 5. At this time, there exist the intermediate data memory (intermediate buffer) 5-1, the print image memory (cache buffer) 5-2, and the output print image memory (band raster buffer) 5-3 of band size which is smaller than one page as described in Column 7, lines 55-60) and if said second discrimination unit discriminates that the data in the area Na has been transmitted to the printer,

wherein said transmission unit transmits data in the areas Na, Nb and Nc on the N-th page and data in the area (N+l)a on the (N+l)th page to the printer, if said first discrimination unit discriminates that the data of the N-th page and the (N+l)th page can be stored in the memory and if said second discrimination unit discriminates that the data in the area Na has not been transmitted to the printer (e.g., 31 shows a state where a free

memory area is assigned to the intermediate data memory 5-1, because the intermediate data memory (intermediate buffer) 5-1 is increased, and short of necessary free memory, so that a part of the print image memory (cache buffer) 5-3 is deleted as described in Column 7, lines 61-65),

wherein said transmission unit transmits data in the areas Nb and Nc on the N-th page to the printer, if said first discrimination unit discriminates that the data of the N-th page and the (N+ 1)th page cannot be stored (e.g., FIG. 3 shows how to alter the capacity of each memory by a program in the memory controller 7, when the space capacity of memory device 5 is insufficient, and a process of reserving the output print image memory (raster buffer) 5-3 of one page as described in Column 7, lines 49-53) in the memory and if said second discrimination unit discriminates that the data in the area Na has been transmitted to the printer, and

wherein said transmission unit transmits data in the areas Na, Nb and Nc on the N-th page to the printer, if said first discrimination unit discriminates that the data of the N-th page and the (N+l)th page cannot be stored in the memory (e.g., FIG. 3 shows how to alter the capacity of each memory by a program in the memory controller 7, when the space capacity of memory device 5 is insufficient, and a process of reserving the output print image memory (raster buffer) 5-3 of one page as described in Column 7, lines 49-53) and if said second discrimination unit discriminates that the data in the area Na has not been transmitted to the printer (e.g., If necessary free area can not be reserved by deleting the control of print image memory (cache buffer) 5-2 as large as possible, the intermediate data memory (intermediate buffer) 5-1 can not be extended any more as described in Column 7, line 66 – Column 8, line 2).

Mitani does not disclose expressly a printer that generates data in a band unit in each of a plurality of colors and prints data based on the generated data.

Iizumi et al. discloses a printer (Shown in Figure 1) that generates data in a band (FIG. 5 is a flow chart showing a banding determination process) unit in each of a plurality of colors and

prints data based on the generated data (one preferred embodiment of the present invention provides an image processing apparatus comprising rendering means for rendering data in a first color space and data in a second color space, and a plurality of image forming means for forming images in units of colors of the rendered image data.)

Iizumi et al. and Mitani are combinable because they are from the same field of endeavor of image processing; e.g., both references disclose methods of rasterized image processing control. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a color image forming apparatus that generates data in a band unit in each of a plurality of colors and prints data based on the generated data. The suggestion/motivation for doing so would have been to include color to a printer's capabilities in order create more pleasing documents. Therefore, it would have been obvious to combine Iizumi et al.'s Color Printer with Mitani's Control Method for a Printer to obtain the invention as specified in claim 25.

Iizumi and Mitani do not disclose expressly wherein the transmission unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourht colors in the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer.

Konno discloses wherein the transmission unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourth colors in the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer (Figure 32 shows the relationship between output timing of images Y1, M1, C1 and K1 on the

first page, each of which is image data, and timing transfer 1 in which the image on the first page is transferred onto the sheet 3, and the timing, at which the image K1 which is the final image data of the first page overlaps).

Konno, Iizumi & Mitani are combinable because they are from the same field of endeavor of image processing; e.g., all three references disclose methods of rasterized image processing control. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourht colors in the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer. The suggestion/motivation for doing so would be to perform sequential processing more economically, and to increase the performance of the printer as disclosed by Konno in the Background and Summary of Invention. Therefore, it would have been obvious to combine Iizumi and Mitani with Konno to obtain the invention as specified to save money and time.

Regarding Claim 27: (Currently Amended)

Claim 25 teaches the apparatus. Claim 27 is obvious over Iizumi, Mitani and Konno because the operation of the apparatus is achieved using the steps of Claim 25.

Regarding Claim 29: (Currently Amended)

Claim 27 teaches the method. Claim 29 is obvious over Iizumi, Mitani and Konno because a computer-readable medium containing computer executed instructions is achieved using the method steps of Claim 27.

Regarding Claim 26. (Currently Amended)

An information processing apparatus (e.g., Host Computer 1 in Figure 1) for transmitting data to a printer (e.g., Printer 100 in Figure 1), wherein the data is divided in a band unit (FIG. 2 illustrates the memory contents of memory device (RAM) 5 of FIG. 1 in a normal state. The memory device 5 in the normal state is divided into the intermediate data memory (intermediate buffer) 5-1, the print image memory (cache buffer) 5-2, and the output print image memory (raster buffer) 5-3 of band size, by the memory location.) in each of a plurality of colors in registration with a position of an image forming section for each color, said information processing apparatus comprising:

a conversion unit configured to convert document data into image data (e.g, Print Image Generator (Rasterizer) 4-1 in Figure 1 as described in Column 6, lines 56-60);

a division unit configured to divide the image data converted by said conversion unit in a band unit (e.g., output print image memory 5-3 (raster buffer) in Figure 1 for memorizing the output print image of band size or one page);

a compression unit configured to compress the image data divided by said division unit (e.g., The image formation (rasterize) is performed in order from the intermediate data a formed on the upper side of page, and the output print image memory 5-3 is formed while gradually compressing the intermediate data memory 5-1 downwards, as shown in FIG. 16E as described in Column 19, lines 29-39);

a calculation unit configured to calculate a size of the image data compressed by said compression unit (e.g., The program code or device which performs what is described at Column 19, lines 15-20; the output print image memory 5-3 is created in accordance with the output size, as shown in FIG. 16C, and the image formation (rasterize) which is essentially performed after intermediate data a of one page have been generated is made partially for the intermediate data a, whereby the abnormal termination caused by insufficient memory capacity is avoided.);

a discrimination unit (e.g., 6 is a controller (CPU) for controlling the entire printing apparatus.) configured to discriminate based on the size of the compressed image data calculated by said calculation unit (e.g., The CPU 6 alters the size of intermediate data memory 5-1, using a program of the memory controller 7, as required, or stores the intermediate data generated in the output print image memory 5-3 as described in Column 19, lines 49-56), whether data of the N-th page and the (N+I)th page can be stored in a memory (FIG. 9 is a map chart showing the memory contents stored in the memory device 6 in a normal state, wherein the memory device (RAM) 5 has consecutive memory areas as described in the example 1, which are normally divided into a first memory area of intermediate data memory (intermediate buffer) 5-1 and a second memory area of print image memory (cache buffer) 5-2 at a boundary 34, with no output print image memory (raster buffer) 5-2 formed as described in Column 11, lines 44-51) if these data are mixed and transmitted in a printing order (e.g., for the intermediate data requiring a relatively long time to form print image, print image generated is saved in the print image memory (cache buffer) 5-2, and when the intermediate data is processed at the next time, the print image saved in the print image memory 5-2 is reused, thereby omitting the time for print image formation and shortening the time needed for the printing process as described in Column 20, lines 28-34.); and

a transmission unit configured to transmit data to the printer (8 is an output unit (output interface) for outputting print image generated to a printer engine 9),

wherein said transmission unit transmits data of the (N+I)th page to the printer after completion of transmission of data of the N-th page, if said discrimination unit discriminates that the data of the N-th page and the (N+ 1)th page cannot be stored in the memory (e.g., FIG. 3 shows how to alter the capacity of each memory by a program in the memory controller 7, when the space capacity of memory device 5 is insufficient, and a process of reserving the output print image memory (raster buffer) 5-3 of one page as described in Column 7, lines 49-53), and

wherein said transmission unit transmits data of the (N+1)th page to the printer before completion of transmission of data of the N-th page, if said discrimination unit discriminates that the data of the N-th page and the (N+ 1)th page can be stored in the memory (30 shows a state where there is a sufficient space capacity of memory device 5. At this time, there exist the intermediate data memory (intermediate buffer) 5-1, the print image memory (cache buffer) 5-2, and the output print image memory (band raster buffer) 5-3 of band size which is smaller than one page as described in Column 7, lines 55-60).

Mitani does not disclose expressly a printer that generates data in a band unit in each of a plurality of colors and prints data based on the generated data.

Iizumi et al. discloses a printer (Shown in Figure 1) that generates data in a band (FIG. 5 is a flow chart showing a banding determination process) unit in each of a plurality of colors and prints data based on the generated data (one preferred embodiment of the present invention provides an image processing apparatus comprising rendering means for rendering data in a first color space and data in a second color space, and a plurality of image forming means for forming images in units of colors of the rendered image data.)

Iizumi et al. and Mitani are combinable because they are from the same field of endeavor of image processing; e.g., both references disclose methods of rasterized image processing control. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a color image forming apparatus that generates data in a band unit in each of a plurality of colors and prints data based on the generated data. The suggestion/motivation for doing so would have been to include color to a printer's capabilities in order create more pleasing documents. Therefore, it

would have been obvious to combine Iizumi et al.'s Color Printer with Mitani's Control Method for a Printer to obtain the invention as specified in claim 25.

Iizumi and Mitani do not disclose expressly wherein the transmission unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourth colors in the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer.

Konno discloses wherein the transmission unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourht colors in the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer (Figure 32 shows the relationship between output timing of images Y1, M1, C1 and K1 on the first page, each of which is image data, and timing transfer 1 in which the image on the first page is transferred onto the sheet 3, and the timing, at which the image K1 which is the final image data of the first page overlaps).

Konno, Iizumi & Mitani are combinable because they are from the same field of endeavor of image processing; e.g., all three references disclose methods of rasterized image processing control. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourht colors in the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer. The suggestion/motivation for doing so would be to perform sequential processing more economically, and to increase the performance of the printer as disclosed by Konno in the Background and Summary of Invention. Therefore, it would have been obvious to

combine Iizumi and Mitani with Konno to obtain the invention as specified to save money and time.

Regarding Claim 28: (Currently Amended)

Claim 26 teaches the apparatus. Claim 28 is obvious over Iizumi, Mitani and Konno because the operation of the apparatus is achieved using the steps of Claim 26.

Regarding Claim 30: (Currently Amended)

Claim 28 teaches the method. Claim 30 is obvious over Iizumi, Mitani and Konno because a computer-readable medium containing computer executed instructions is achieved using the method steps of Claim 28.

Regarding Claim 31: (New)

Mitani discloses an information processing apparatus for transmitting data to an image forming apparatus which forms an image in a sequential order of first to fourth colors, said information processing apparatus comprising:

a discrimination unit (e.g., 6 is a controller (CPU) for controlling the entire printing apparatus) configured to discriminate whether data of an N-th page and an (N+I)th page can be stored in a memory if these data are mixed and transmitted in a printing order (e.g., 31 shows a state where a free memory area is assigned to the intermediate data memory 5-1, because the intermediate data memory (intermediate buffer) 5-1 is increased, and short of necessary free memory, so that a part of the print image memory (cache buffer) 5-3 is deleted as described in Column 7, lines 61-65); and

a transmission unit configured to transmit data to the image forming apparatus, wherein said transmission unit transmits data of the first color of the (N+l)th page to the image forming apparatus after completion of transmission of data of the fourth color of the N-th page, if said discrimination unit discriminates that the data of the N-th page and the (N+l)th page cannot be stored in the memory (e.g., FIG. 3 shows how to alter the capacity of each memory by a program in the memory controller 7, when the space capacity of memory device 5 is insufficient, and a process of reserving the output print image memory (raster buffer) 5-3 of one page as described in Column 7, lines 49-53), and

wherein said transmission unit transmits data of the first color of the (N+l)th page to the image forming apparatus before completion of transmission of data of the fourth color of the N-th page, if said discrimination unit discriminates that the data of the N-th page and the (N+l)th page can be stored in the memory (30 shows a state where there is a sufficient space capacity of memory device 5. At this time, there exist the intermediate data memory (intermediate buffer) 5-1, the print image memory (cache buffer) 5-2, and the output print image memory (band raster buffer) 5-3 of band size which is smaller than one page as described in Column 7, lines 55-60).

Mitani does not disclose expressly a printer that generates data in a band unit in each of a plurality of colors and prints data based on the generated data.

Iizumi et al. discloses a printer (Shown in Figure 1) that generates data in a band (FIG. 5 is a flow chart showing a banding determination process) unit in each of a plurality of colors and prints data based on the generated data (one preferred embodiment of the present invention provides an image processing apparatus comprising rendering means for rendering data in a first color space and data in a second color space, and a plurality of image forming means for forming images in units of colors of the rendered image data.)

Iizumi et al. and Mitani are combinable because they are from the same field of endeavor of image processing; e.g., both references disclose methods of rasterized image processing control. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a color image forming apparatus that generates data in a band unit in each of a plurality of colors and prints data based on the generated data. The suggestion/motivation for doing so would have been to include color to a printer's capabilities in order create more pleasing documents. Therefore, it would have been obvious to combine Iizumi et al.'s Color Printer with Mitani's Control Method for a Printer to obtain the invention as specified in claim 25.

Iizumi and Mitani do not disclose expressly wherein the transmission unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourht colors in the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer.

Konno discloses wherein the transmission unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourth colors in the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer (Figure 32 shows the relationship between output timing of images Y1, M1, C1 and K1 on the first page, each of which is image data, and timing transfer 1 in which the image on the first page is transferred onto the sheet 3, and the timing, at which the image K1 which is the final image data of the first page overlaps).

Konno, Iizumi & Mitani are combinable because they are from the same field of endeavor of image processing; e.g., all three references disclose methods of rasterized image processing control. At the time of the invention, it would have been obvious to a

person of ordinary skill in the art to unit transmits data of the first to the fourth colors in a non-overlapping area Nb and data of the third and the fourht colors in the area Nc on a N-th page, as well as data in an overlapping area (N+1)a on a (N+1)th page to a printer. The suggestion/motivation for doing so would be to perform sequential processing more economically, and to increase the performance of the printer as disclosed by Konno in the Background and Summary of Invention. Therefore, it would have been obvious to combine Iizumi and Mitani with Konno to obtain the invention as specified to save money and time.

Regarding Claim 32: (New)

Claim 31 teaches the apparatus. Claim 32 is obvious over Iizumi, Mitani and Konno because the operation of the apparatus is achieved using the steps of Claim 31.

Regarding Claim 33: (Currently Amended)

Claim 32 teaches the method. Claim 33 is obvious over Iizumi, Mitani and Konno because a computer-readable medium containing computer executed instructions is achieved using the method steps of Claim 32.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawata et al. (US 6,219,149) discloses a print processing apparatus realizes high speed processing of input data which includes various types of

drawing objects such as images, graphics and characters. In the apparatus, input data generated by an input data generating unit is converted into intermediate data in an intermediate data generating element.

Examiner Notes

6. The Examiner cites particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully considers the references in its entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or as disclosed by the Examiner.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neil R. McLean whose telephone number is (571)270-1679. The examiner can normally be reached on Monday through Friday 7:30AM-4:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571.272.7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Neil R. McLean/

Examiner, Art Unit 2625

/David K Moore/

Supervisory Patent Examiner, Art Unit 2625